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## ABSTRACT

This longitudinal study of children's drawings is designed to indicate important aspects of the socialization process through analysis of changes in children's drawings. The Draw-A-Classroom (DAC) Test was administered to 100 students between 1961 and 1966. Data was available from a total of eight test administrations, given in the period between prekindergarten and fourth grade. All drawings were coded according to content areas and other specified characteristics. Analysis of results of the 6-year study clearly show that the many facets of the changing world of the child are paralleled by changes in his drawings. Three major areas of change were identified: (1) realism, (2) sophistication, and (3) conformity of content. Discussion focuses on the processes responsible for such change, and the potential of the DAC as a research tool. A statistical appendix comprises more than five-sixths of this document. (DP)

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CHANGES WITH TIME IN THE CONTENT OF  
CHILDREN'S DRAWINGS

A LONGITUDINAL STUDY WITH THE  
"DRAW-A-CLASSROOM TEST"

Rex S. Rogers

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CHANGES WITH TIME IN THE CONTENT OF CHILDREN'S DRAWINGS:  
A LONGITUDINAL STUDY WITH THE "DRAW-A-CLASSROOM TEST"

INTRODUCTORY PREFACE

When, as adults, we evaluate children, we do so using our adult concept structure (which may or may not be that of the child) and our purposes are those that relate to the adult world. This statement contains two propositions about the way we judge other people. The first proposition, that we can use only concepts currently available to us is obvious. We cannot, for example, validly judge a child's ability in French except against our own fluency in French. If we do not have proficiency we cannot judge accurately because we do not have the necessary concepts.

The second proposition is that when we are faced with the task of evaluating people for their ability to be full participating members of our culture, we use as our criteria their fluency in and conformity to the ways and language of our culture. This demand for conformity to what "we want" we apply to both children and those people from alien cultures who wish to join our own.

When judgement becomes formalized we have generated some kind of "test." In education, the test functions as a measure of the degree to which, within the boundaries of the test, an individual approximates what we as a society demand of the educated. We "want" literate adults or non-neurotic adults so we rate children by the extent to which they approximate our ideals of literacy or freedom from neurosis. The justification for the diversity of tests that we have (teacher ratings, parent ratings, examinations, I.Q., specific aptitudes, class marks, projective, etc.) is that they measure different aspects of a mental life and that

we need all of them to measure the "whole man." Our conviction that these tests are measuring different things, stems both from their obviously divergent content and from the observation that scoring "highly" on one test does not predict a "high" score on another with any degree of reliability. By having a battery of many tests we can evaluate across the full spectrum of areas in which we expect and demand acquisition of a certain degree of fluency.

The application of psychometrics within education may be said to condense to:

- (a) the establishment of norms [age-based averages (empirical norms) or desirable levels (arbitrary norms)];
- (b) the use of these norms to measure an individual's progress (this includes diagnostic tests);
- and/or (c) the use of these norms to determine change in an individual's progress related to experience.

As the demands of a society alter so particular criteria come and go and the emphasis placed on others changes.

The Draw-A-Classroom Test is a non-formal, classification of drawing content devised as an instrument for looking into the world of the child as he presents it in his drawings (Board of Education, 1966). The D.A.C. contains the germ of a formal psychological test and can be used to produce data that demonstrate the "law of growth" towards the adult world that is almost a definition of what we mean by maturation or achievement in education. There are, however, other uses to which the D.A.C. data can be put apart from providing the framework for "yet another test." Perhaps the most interesting of which is as a guide to the socialization process in the child. This approach seeks to examine all changes that occur and then attempts to synthesize from them a verbal interpretation

that may be of value in our dealings with the child and perhaps in the child's dealings with us, the latter approach has been adopted in this paper.

## INTRODUCTION

In 1960, the Research Department of the Board of Education for the City of Toronto instituted a major longitudinal study of the early school years. This research project, "The Study of Achievement" (Board of Education - 1963, 1964 and 1966) was designed to study some of the changes that occur with time in the mental life of a child in an educational environment. One of the measures used in this study was the D.A.C. Test and some data obtained from it have already been reported (Dickinson, 1965; Board of Education, 1968).

As the article by Dickinson (1965) and a further report by the Research Department (Board of Education, 1967) both contain comprehensive literature surveys, this material will not be repeated in this report. The reader is referred to these sources for relevant prior information. The data presented here relate to temporal changes in D.A.C. test scores for a sample of one hundred children studied over six years during which time the average child progressed from Junior Kindergarten to Grade 4. Other analyses dealing with such matters as the "effects" of Junior Kindergarten are included in separate reports being prepared concurrently.

## METHOD

### A - The Test

The D.A.C. Test is administered by the teacher with no time restrictions. Each pupil in the class is given a sheet of paper, eight coloured crayons (red, black, brown, yellow, blue, green, orange, and purple) and is told to "look around and draw your classroom." When the drawing is completed the child is asked to tell his teacher (or a monitor) about the drawing; these words are recorded on the face of the drawing.

### B - The Selection of the Study Sample

Of the 8,500 pupils included in the Study of Achievement, 1,500 began their schooling in Junior Kindergarten. From this latter group, a random group of 100 was chosen with the two restrictions that the selected pupils should never have changed schools and never have missed a drawing test. The data from eight administrations were available:

<u>Time of Administration</u>	<u>Grade Position</u>	<u>Code for This Test</u>
March, 1961	Junior Kindergarten	JK 1
April, 1961	Junior Kindergarten	JK 2
March, 1962	Senior Kindergarten	SK 1
May, 1962	Senior Kindergarten	SK 2
April, 1963	Grade 1	G 1
February, 1964	Grade 2	G 2
March, 1965	Grade 3	G 3
April, 1966	Grade 4	G 4

In the 1960-1961 tests, all the selected children were in Junior Kindergarten. After that date normal promotion resulted in the majority of children falling in the grades shown. Some children tested in 1966, for example, may, however, have only reached Grade 3. It is, nevertheless,



convenient to label the study-stages by the grade in which the vast majority of the pupils are located.

### C - Classification of the Test Material

All the drawings were coded for the presence or absence of a large number of criteria, which were, in the main, concerned with a complete objective classification of their content rather than with aesthetic or interpretative judgements. The codes were grouped within five main areas

of interest: Persons  
Space  
Classroom Constants  
Drawing the Person  
Objects

Within each of these five content areas just given there were some 15 - 20 different sub-areas and within each of these sub-areas, 2 - 10 individual codes. For example:

<u>Content Area</u>	<u>Sub-Area</u>	<u>Individual Codes</u>
		- no frame lines present
		- only one frame line present
Space	Joined Frame Lines	- more than one frame line present but not joined
		- more than one frame line present and joined

Each drawing was classified as belonging in one but not more than one individual code within each sub-area.

Complete details of the codes are given in the Coding Manual (Board of Education, 1966).

### D - Treatment of the Data

Each individual code within a sub-area had a percentage frequently attached to it. The total code in a sub-area always totalled 100%. For example:

<u>Sub-Area</u>	<u>Individual Codes</u>	<u>Test in Grade</u>	
		<u>JK 1</u>	<u>G 4</u>
Joined Frame Lines	- no frame lines present	69.0%	94.0%
	- only one frame line present	9.0	2.0
	- more than one frame line present but not joined	5.0	0.0
	- more than one frame line present and joined	17.0	4.0
		<u>100.0%</u>	<u>100.0%</u>

To aid in the interpretation of large volumes of such data, the following statistic was calculated:  $Z = (p_1 - p_2) / \sqrt{pq(1/n_1 + 1/n_2)}$ , in which the percentage observed for SK,  $p_1$  and the percentage for JK,  $p_2$  are compared to determine whether the difference between them is large enough to be "real" rather than due to "chance." ( $n_1$  and  $n_2$  are the two sample sizes and in our case are equal;  $q$  is  $100\% - p\%$  where  $p\%$  is the average of  $p_1$  and  $p_2$ ). In any instance where  $Z$  exceeds 1.96 we can conclude that the difference would only have occurred by chance one time in twenty or as is more usually said, the result is significant at the 5% level.

As an example, for a  $p$  of 5% (or 95%)  $p_1 - p_2$  has to exceed 6.2% while for a  $p$  of 50% the difference has to exceed 14.2%, both results at the 5% level for  $n_1 = n_2 = 100$ .

It will be noted that the nearer  $p$  the average observed percentage approaches 50% the greater  $p_1 - p_2$  has to be for the result to be statistically significant.

## RESULTS

### Tabulation and Interpretation of the Data

Because of the volume of the data involved in this research, this material is tabulated at the end of this document. The most obvious feature of the data is that it shows many age trends, with few sub-areas not showing changes between Junior Kindergarten and Grade 4.

The great volume of literature on children's drawings serves to remind us that various kinds of interpretations of content and content trend are possible. Our problem of trying to abstract from the data some clear and yet not too rigid an account has, to a large extent, been solved for us by our earlier consideration of the way we judge by our adult codes and values.

We can formalize our earlier discussion to yield one major postulate: The drawings become more and more "adult", in the sense of representational, as the children get older and progress through school.

Although it would be possible simply to list the many time-trends that seem to be in line with this postulate, it became apparent as the data were processed that three kinds of changes seemed to dominate the results. These were:

- (i) Realism - objects look more and more as they would in a photograph;
- (ii) Sophistication - an increasing skill at differentiating objects and their inter-relationships;
- (iii) Conformity of Content - an increasing tendency to conform to the letter of the instructions (i.e. to draw their classrooms and nothing else)

The following trends in the data were felt to support each of the above categories:

(i) Realism

Table No. \*\*

Instances of:	Accuracy of determining sex of		
	unlabelled children .....	increased	1;5
	Frame lines .....	decreased	2;5
	Empty spaces .....	decreased	2;13
	Having hair on heads .....	increased	4;1
	Having distinct necks .....	increased	4;5
	Having arms and having them		
	correctly located .....	increased	4;6
	Having fingers or thumbs drawn on		
	hands .....	increased	4;7
	Having legs and having them		
	correctly located .....	increased	4;8
	Profile representation of feet .....	increased	4;9
	Feet represented by ellipse rather		
	than line .....	increased	4;10
	Feet being more proportional .....	increased	4;10
	Heels being given .....	increased	4;10
	Waisted trunks being given .....	increased	4;11
	Complete bodies with solid rather		
	than stick extremities .....	increased	4;13
	Omission of clothing .....	decreased	4;15

(ii) Sophistication

Instances of:	Use of the total page space .....	increased	2;13
	Complete rather than partial		
	background shading .....	increased	2;15
	Indeterminate viewpoint (artist's eye) .....	decreased	2;17
	Shading and shading with additional		
	outline of familiar classroom		
	objects .....	increased	3;11
	Colouring familiar classroom objects		
	in elaboration or differentiation ...	increased	3;12
	Groupings of three or more familiar		
	classroom objects .....	increased	3;13
	Use of colour to differentiate facial		
	features .....	increased	4;4
	Back and side views of the body .....	increased	4;14
	Use of colour to differentiate body		
	parts .....	increased	4;20
	"Behind/in front of" relationships ....	increased	5;3
	"On/under" relationships .....	increased	5;4
	Use of perspective devices .....	increased	5;5
	Many colours being used .....	increased	5;7

(iii) Conformity of Content

Instances of:	Ceilings rather than roofs or sky		
	as the top boundary .....	increased	2;8
	Floors as the bottom boundary .....	increased	2;10
	Drawing content from outside of the		
	bounds of the classroom .....	increased	2;14
	Inclusion of familiar classroom objects .....	increased	3;1
	Windows .....	decreased	3;3

\*\* Refers to tables given in the attached appendix.

(iii) Conformity of Content (continued)

Instances of:	One door rather than multiple doors ..	increased	3;4
	Blackboards .....	increased	3;5
	Pictures .....	decreased	3;5
	Children's furniture .....	increased	3;6/7
	Teacher's furniture .....	increased	3;8/9
	Teacher as the most detailed person ..	increased	4;18

## DISCUSSION

The results of the Toronto Board of Education's six year longitudinal study clearly show that the many facets of the changing world of the child at school are paralleled by changes in his drawings.

As these changes were studied, it was observed that many of the trends seemed to group themselves into three distinct kinds of change, realism, sophistication and conformity of content.

The first two types of changes are, probably reflections of the child's growing intelligence, that is an increasing knowledge of the world adults see and an increasing acquisition of the skills needed to reflect it accurately. This should not surprise us too much because many of the items we have condensed into "realism" are taken from, or akin to, those in the Goodenough "Draw-A-Man" Test of Intelligence. It is more difficult to be definite about the content of "sophistication" but some of the items are related to changes in the concept-structure of children as they grow older, described in detail by Piaget (Piaget & Inhelder, 1956).

Conformity of content seems more a measure of social learning, a learning of the rules of the game. The older children behave as though they were approaching art more as part of the curriculum, subject to the same rules of conformity that exist for more academic subjects. Even at Grade 4, however, the conformity is not by any means total.

Considered as an experimental study of developmental change, the D.A.C. Test may be said to have shown both the virtues and the vices of a deliberately semi-structured research instrument. Obviously we benefited by finding trends that would have remained submerged under a more rigid

and confined structure as, for example, some of the relationships between objects. An obvious loss is that where a child did not perceive any need to include people we were left with no knowledge of how that child would have tackled them. This is a loss, however much we may feel that the omission itself is "significant."

The data on the D.A.C. Test given here and other data to be made available soon offer, coupled with the coding manual, the basis of a fascinating research instrument which can be as formal or informal as the investigator wishes. As we discussed in introducing this report, it would be possible to use the kinds of trends with age which we discovered as the basis of some kind of test of "achievement." We do not feel that such a venture would be worthwhile because several drawing-based tests exist already.

A possibility being actively pursued by the Toronto Board of Education is that of trying to identify specific characteristics of the drawings of an individual child that may enable us to predict the child's eventual referral to Child Adjustment Services. This information, together with a condensation of all other data, will appear in a consolidated report on the D.A.C. Test to be made available in 1969. Certain points of discussion have been omitted from this report as being more appropriate for inclusion in a more comprehensive final document.

The major distinction of the D.A.C. Test is that it is administered in the classroom by a teacher known to the children and its importance may well be related to this orientation in a familiar yet formal environment

The D.A.C. Test should be of interest to all those concerned with children and art. It operates in an area of school life somewhat isolated from the main academic stream, where awareness of the "need to succeed" may enter the child's life at a higher age and less forcibly than

in more formal subjects. The teacher, therefore, may find this particular aid to child-teacher communication particularly welcome.



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STATISTICAL APPENDIX

PERSONS -- TABLES 1:1 - 1:19

# NOTES ON THE TABLES

1. All frequencies given are actual numbers, however, as the base number for all columns is 100, they may also be directly read as percentages.
2. The following abbreviations are used for the time of test administration:

JK1 = March 1961

JK2 = April 1961

SK1 = March 1962

SK2 = May 1962

G1 = April 1963

G2 = February 1964

G3 = March 1965

G4 = April 1966

3. The first figure in the numbering of the tables (e.g. the "3" in 3:12) refers to the content area. The complete coding is:

1: Persons

2: Space

3: Classroom Constants

4: Drawing the Person

5: Objects

4. The terminal figures in the table numbering refer to each specific sub-area within a content area.

TABLE 1:1  
APPEARANCE OF PERSON(S)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) and NO labels identifying persons	59	60	49	49	46	47	46	71
Scorable person(s) present	40	36	49	51	53	53	54	28
Persons present, but NOT scorable	1	4	2	0	1	0	0	1

Interpretation: Some 40% of the Junior Kindergarten drawings featured people, this value increased to around 50% for all subsequent tests except those given in Grade 4 where the value fell to just under 30%.

TABLE 1:2  
PERSON(S) LABELLED "BOYS" OR WITH BOY'S NAMES (EXCLUDING "ARTIST")

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present or NO labelled boy(s)	88	94	90	86	85	82	89	95
ONE labelled boy	10	4	9	10	10	8	4	3
TWO labelled boys	2	2	0	2	2	6	2	0
MORE than TWO labelled boys	0	0	1	2	3	4	5	2

Interpretation: The inclusion of labelled boys increased from about 10% in Kindergarten to 18% in Grade 2, by Grade 4 however, the figure had declined to 5%. Instances of multiple boys seemed to increase frequency with age.

TABLE 1:3

PERSON(S) LABELLED "GIRLS" OR WITH GIRL'S NAMES (EXCLUDING "ARTIST" AND TEACHER(S))

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present or NO labelled girl(s)	85	92	79	88	83	79	81	93
ONE labelled girl	11	6	14	6	12	8	12	3
TWO labelled girls	3	2	3	2	5	10	4	2
MORE than TWO labelled girls	1	0	4	4	0	3	3	2

Interpretation: The inclusion of labelled girls increased from about 10% in Junior Kindergarten to 21% in Grade 2, by Grade 4 however, the figure had declined to 7%. Instances of multiple girls seemed to increase in relative frequency with age.

TABLE 1:4

UNSPECIFIED CHILDREN

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present or NO unspecified children present	92	95	84	80	72	75	72	81
ONE labelled BUT unspecified child	0	1	0	3	1	2	2	1
TWO labelled BUT unspecified children	0	1	2	0	1	4	2	2
MORE than TWO labelled children	3	0	10	8	18	15	11	11
ONE UNLABELLED child	2	1	2	4	4	1	4	2
TWO UNLABELLED children	3	1	0	1	0	1	0	0
MORE than TWO UNLABELLED children	0	1	1	4	2	2	9	3
BOTH labelled and unlabelled child (children)	0	0	1	0	2	0	0	0

Interpretation: The presence of unspecified children showed an increase from under 10% in Junior Kindergarten to 28% in Grade 1 but declined again to 19% by Grade 4.

TABLE 1:5

SEX OF UNSPECIFIED CHILD (CHILDREN) INDICATED BY DRAWING

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	57	64	50	49	46	47	46	74
NO unspecified child (children)	35	31	34	31	26	28	27	7
Sex of unspecified child (children) cannot be identified by drawing	6	5	13	13	13	10	14	8
ALL unspecified child (children) look like BOYS	1	0	0	1	2	0	2	0
ALL unspecified child (children) look like GIRLS	0	0	1	4	4	7	1	3
Of the unspecified children, one to some look like BOYS, and/or one to some look like GIRLS	1	0	2	2	9	8	10	8

Interpretation: There was an increasing tendency with age for instances of unspecified children to be identifiable as to sex and for both sexes to be represented.

TABLE 1:6

SIZE OF TEACHER RELATIVE TO CHILDREN (EXCLUDING "ARTIST")

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO COMPARISON POSSIBLE								
-- NO teacher(s) present								
-- NO children present								
-- size difference is NOT obvious	95	100	90	92	84	74	79	90
Teacher(s) LARGER than ALL children	2	0	9	5	16	21	18	7
Teacher(s) SMALLER than ALL children	1	0	0	1	0	1	1	0
Teacher(s) SAME size as ALL children	0	0	1	0	0	1	2	1
Any combination of teacher being smaller, larger and/or same size as other children	2	0	0	2	0	3	0	2

Interpretation: The presence of a large teacher figure increased from a near zero frequency in Junior Kindergarten to 21% in Grade 2 only to decline again to 7% in Grade 4. At all levels the teacher/child size ratio was generally shown correctly.

TABLE 1:7

SIZE OF TEACHER RELATIVE TO "ARTIST"

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO COMPARISON POSSIBLE								
-- NO teacher(s) present								
-- NO "artist" present								
-- size difference is NOT obvious	96	99	96	99	95	97	97	99
Teacher(s) LARGER than "artist"	4	1	4	1	5	3	1	0
Teacher(s) SMALLER than "artist"	0	0	0	0	0	0	1	0
Teacher(s) SAME size as "artist"	0	0	0	0	0	0	1	1

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:8

SIZE OF OTHER ADULT(S) RELATIVE TO CHILDREN, INCLUDING "ARTIST" (EXCLUDING TEACHER(S))

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO COMPARISON POSSIBLE								
-- NO adult(s) present								
-- NO children present								
-- size difference is NOT obvious	100	97	99	98	99	97	99	100
Adult(s) LARGER than children including "artist" if present	0	1	0	1	0	2	0	0
Adult(s) SMALLER than children including "artist" if present	0	2	0	1	0	0	0	0
Adult(s) SAME size as children including "artist" if present	0	0	0	0	0	1	0	0
Any combination of adult(s) being smaller, larger and/or same size as other children including "artist"	0	0	1	0	1	0	1	0

Interpretation: Bases too small to justify the drawing of conclusions.



TABLE 1:9

SIZE OF LABELLED BOYS RELATIVE TO LABELLED GIRLS (EXCLUDING "ARTIST")

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO COMPARISON POSSIBLE								
-- NO labelled boy(s) present								
-- NO labelled girl(s) present								
-- size difference is NOT obvious	95	99	97	96	94	86	98	98
All boy(s) LARGER than all girl(s)	1	0	1	0	1	2	0	0
All boy(s) SMALLER than all girl(s)	3	0	0	1	1	2	1	0
All boy(s) SAME size as all girl(s)	1	1	0	1	4	6	1	2
Any combination of boys being larger, smaller and/or same size as girls	0	0	2	2	0	4	0	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:10

SIZE OF UNSPECIFIED CHILDREN

i.e., SEX OF CHILD (CHILDREN) IS NOT SPECIFIED BY LABEL

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	57	64	50	49	51	48	46	71
NO COMPARISON POSSIBLE								
-- No unspecified children								
-- ONLY ONE unspecified child								
-- Sex cannot be determined								
-- ONLY ONE sex present								
-- size difference is NOT obvious	42	36	49	49	42	46	48	23
All unspecified boy(s) LARGER than unspecified girl(s)	0	0	0	0	0	1	0	0
All unspecified boy(s) SMALLER than unspecified girl(s)	1	0	0	1	2	1	1	0
Unspecified boy(s) SAME size as unspecified girl(s)	0	0	0	0	2	2	3	6
Any combination of unspecified boy(s) being smaller, larger, and/or same size as unspecified girl(s)	0	0	1	1	3	2	2	0

Interpretation: Based too small to justify the drawing of conclusions.

TABLE 1:11

SIZE OF "ARTIST" RELATIVE TO OTHER CHILDREN  
(BOTH LABELLED AND UNLABELLED)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO COMPARISON POSSIBLE								
-- NO children present								
-- NO "artist" present								
-- size difference is NOT obvious	95	99	96	94	93	93	98	99
"Artist" LARGER than ALL children	1	0	1	2	0	2	1	0
"Artist" SMALLER than ALL children	1	1	1	3	1	1	0	0
"Artist" SAME size as ALL children	2	0	1	0	5	3	1	1
Any combination of "artist" being smaller, larger, and/or same size as other children	1	0	1	1	1	1	0	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:12

ACTIVITY OF TEACHER

i.e., PERSON LABELLED "TEACHER," "YOU,"  
OR "TEACHER'S NAME," "MR.," "MISS," "MRS.," ETC.

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present or NO teacher present	90	90	83	81	74	69	69	83
ONE or MORE teachers, INACTIVE	6	9	11	13	18	20	17	9
ONE or MORE teachers, ACTIVE	2	1	4	5	3	6	4	5
ONE or MORE teachers, INTERACTING among selves and/or adults, labelled or unlabelled	0	0	0	0	0	0	0	0
ONE or MORE teachers, INTERACTING with boys only	0	0	0	0	1	1	1	1
ONE or MORE teachers, INTERACTING with girls only	1	0	0	0	1	1	1	1
ONE or MORE teachers, INTERACTING only with "artist"	0	0	0	0	1	0	0	0
ONE or MORE teachers, INTERACTING with CHILDREN in general (both boys and girls, labelled and unlabelled)	1	0	2	1	2	3	8	1

Interpretation: Inclusion of at least one teacher increased from 10% in Junior Kindergarten to 31% in Grades 2 and 3 only to decline in frequency to 17% in Grade 4. No change in the teachers' activities were noted from the Junior Kindergarten to the Grade 4 drawings.

TABLE 1:13

ACTIVITY OF ADULT PERSON(S)  
e.g., LABELLED MAN, MOTHER, PRINCIPAL, ETC. (EXCLUDING TEACHER(S))

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present or NO other adult(s) present	93	89	98	96	99	97	98	99
ONE or MORE adults, INACTIVE	6	9	0	2	0	1	0	1
ONE or MORE adults, ACTIVE	1	2	1	1	1	1	0	0
ONE or MORE adults, INTERACTING among selves and/or teachers and/or unlabelled adults	0	0	0	0	0	0	1	0
ONE or MORE adults INTERACTING with boys only	0	0	0	1	0	0	0	0
ONE or MORE adults INTERACTING with girls only	0	0	0	0	0	0	0	0
ONE or MORE adults INTERACTING only with "artist"	0	0	0	0	0	0	0	0
ONE or MORE adults INTERACTING with CHILDREN in general (both boys and girls, labelled and unlabelled)	0	0	1	0	0	1	1	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:14

ACTIVITY THROUGH SEGREGATION OF LABELLED CHILDREN  
LABELLING MUST BE BY SEX OR NAME (EXCLUDING "ARTIST")

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present or								
-- only boys or only girls present								
-- only one member of each sex present								
-- unspecified children, sex not identifiable								
-- unspecified children of only one sex	98	100	98	96	87	84	88	90
Boys and girls present, NEITHER SEX labelled	0	0	0	1	6	5	6	6
Boys and girls present, ONLY ONE SEX labelled	0	0	0	0	3	0	3	2
BOTH SEXES labelled	1	0	0	2	3	9	2	1
BOTH SEXES labelled but SEGREGATED from each other	0	0	1	1	1	0	0	0
BOTH SEXES labelled but SEGREGATED from each other and interacting within segregated group	0	0	0	0	0	0	0	0
BOTH SEXES labelled and INTERACTING together (include ANY interaction between three or more children, PROVIDING they are of the opposite sex)	1	0	1	0	0	2	1	1

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:15  
ACTIVITY OF ARTIST  
CHILD LABELLED "ME" OR BY "ARTIST'S" NAME

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
ABSENCE of "me," etc., or "artist"	90	95	90	91	90	92	96	99
"Artist" present and INACTIVE	7	5	6	5	7	4	1	0
"Artist" present and ACTIVE ALONE	2	0	4	3	2	3	0	1
"Artist" present more than once	0	0	0	0	0	0	0	0
ARTIST INTERACTING with ONE SEX ONLY	0	0	0	1	0	0	0	0
ARTIST INTERACTING with other labelled boys and girls	0	0	0	0	0	1	0	0
ARTIST INTERACTING with unspecified children	0	0	0	0	0	0	1	0
ARTIST INTERACTING with adult(s); include teacher	0	0	0	0	1	0	2	0
ARTIST INTERACTING with a combination of any of the above	1	0	0	0	0	0	0	0
ARTIST present more than once and is interacting at least with one of the above	0	0	0	0	0	0	0	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:16

ACTIVITY OF UNSPECIFIED CHILDREN -- NO LABEL FOR SEX OR NAME  
ACTIVITY MUST BE SPECIFICALLY LABELLED OR CLEARLY INDICATED BY DRAWING

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO unspecified child (children) present	92	95	83	80	72	77	74	81
Unspecified child (children) present, but INACTIVE	6	5	6	13	17	15	17	11
Unspecified child (children) present, but ACTIVE ALONE	0	0	4	3	2	1	2	1
Unspecified girls interacting with own sex	0	0	0	0	0	0	0	0
Unspecified boys interacting with own sex	0	0	0	0	0	0	0	0
Unspecified child (children) INTERACTING ACROSS sex lines	0	0	1	1	2	0	1	0
Unspecified child (children) INTERACTING, but sex of children cannot be determined	1	0	5	2	3	3	1	2
Unspecified child (children) interacting with labelled adult(s) -- include teacher	0	0	1	1	4	2	2	1
Unspecified child (children) interacting with labelled or unlabelled boys and/or girls and/or adults and/or unspecified children	1	0	0	0	0	2	3	4

Interpretation: Bases too small to justify the drawing of conclusions.



TABLE 1:17

ACTIVITY OF LABELLED BOY(S), e.g., "TOM," "BOY(S)"  
 ACTIVITY MUST BE SPECIFICALLY LABELLED  
 OR CLEARLY INDICATED BY DRAWING (EXCLUDING "ARTIST")

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO labelled boy(s)	88	94	89	86	85	82	89	95
Labelled boy(s) INACTIVE	8	3	8	9	8	11	4	2
Labelled boy(s) ACTIVE alone	3	2	0	1	2	0	3	1
Labelled boy(s) INTERACTING with other labelled boy(s)	0	0	0	3	0	1	2	0
Labelled boy(s) INTERACTING with girl(s)	0	1	1	0	2	2	0	0
Labelled boy(s) INTERACTING with unspecified child (children)	0	0	0	1	0	0	0	1
Labelled boy(s) INTERACTING with BOTH labelled boy(s) and girl(s)	0	0	0	0	0	2	0	1
Labelled boy(s) INTERACTING with artist	0	0	0	0	0	0	0	0
Labelled boy(s) INTERACTING with adults (labelled or unlabelled) including teacher(s)	0	0	1	0	2	1	2	0
Labelled boy(s) INTERACTING with a combination of any of the above	1	0	1	0	1	1	0	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:18

ACTIVITY OF LABELLED GIRL(S), e.g., "SUSAN," "GIRL(S)"

ACTIVITY MUST BE SPECIFICALLY LABELLED  
OR CLEARLY INDICATED BY DRAWING (EXCLUDING "ARTIST")

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO labelled girl(s)	85	92	79	88	83	79	84	94
Labelled girl(s) INACTIVE	12	6	7	8	10	11	11	5
Labelled girl(s) ACTIVE alone	1	1	11	3	1	4	1	0
Labelled girl(s) INTERACTING with other girl(s)	0	0	0	0	2	0	1	0
Labelled girl(s) INTERACTING with boy(s)	0	1	0	0	2	2	1	0
Labelled girl(s) INTERACTING with unspecified child (children)	0	0	0	0	0	0	0	0
Labelled girl(s) INTERACTING with BOTH labelled girl(s) and boy(s)	0	0	0	0	0	2	0	1
Labelled girl(s) INTERACTING with artist	0	0	0	1	0	0	0	0
Labelled girl(s) INTERACTING with adults (labelled or unlabelled) including teacher(s)	1	0	0	0	0	1	1	0
Labelled girl(s) INTERACTING with a combination of any of the above	1	0	3	0	2	1	1	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 1:19

DIFFERENTIATION OF TYPE OF PERSON BY LABELLING (EXCLUDING "ARTIST" AND TEACHER(S))

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO label(s) present or, "artist" and/or "teacher" present	51	54	58	54	54	53	55	73
PEOPLE or HEAD present but NO LABELLING	3	1	1	4	2	2	11	1
NO specific labelling, e.g., "people," "someone," "everybody," "they"	1	1	2	4	1	2	5	7
Labelling indicating AGE category but not sex, e.g., "children," "kids," "us," "we"	8	4	4	2	14	13	4	3
Labelling indicating SEX category but not age, e.g., "he," "she"	0	0	1	0	0	1	0	0
Labelling indicating both AGE and SEX, e.g., "boys," "girls," "man," "lady," "sister," "brother"	13	20	7	4	3	3	5	2
Labelling only by PROPER NAME (include "mother," "father")	11	12	16	23	17	18	13	9
Labelling with any combination of the preceding five codes	13	8	11	9	9	8	7	5

Interpretation: Instances of differentiation by labelling declined dramatically in Grade 4 from about half to about one quarter of occasions. Instances of labelling by age and sex seemed to decline with age while instances of non-specific labelling seemed to increase with age.

STATISTICAL APPENDIX

SPACE -- TABLES 2:1 - 2:18

TABLE 2:1

A HORIZONTAL LINE AT THE TOP OF THE PAPER (NOT A SHADED BAND)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Absent	81	81	76	83	86	89	96	96
Present	19	19	24	17	14	11	4	4

Interpretation: There was a steady decline in the incidence of horizontal top lines from 19% in Junior Kindergarten to 4% in Grade 4.

TABLE 2:2

A HORIZONTAL LINE AT THE BOTTOM OF THE PAPER (NOT A SHADED BAND)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Absent	80	82	82	88	96	92	97	96
Present	20	18	18	12	4	8	3	4

Interpretation: A very similar decline to that occurring with top lines was noted.

TABLE 2:3

A VERTICAL LINE AT THE LEFT SIDE OF THE PAPER (NOT A SHADED BAND)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Absent	77	80	75	83	86	90	97	95
Present	23	20	25	17	14	10	3	5

Interpretation: Occurrences of left side vertical lines declined from about 20% in Junior Kindergarten to 5% in Grade 4.

TABLE 2:4

A VERTICAL LINE AT THE RIGHT SIDE OF THE PAPER (NOT A SHADED BAND)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Absent	79	81	74	83	87	90	94	97
Present	21	19	26	17	13	10	6	3

Interpretation: A similar decline to that noted for left side lines occurred here.

TABLE 2:5

JOINED FRAME LINES

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO frame line(s) present	69	73	68	78	86	86	95	94
ONLY ONE frame line present	9	6	6	2	1	3	0	2
MORE than ONE frame line present BUT NOT JOINED	5	4	6	1	0	2	1	0
MORE than ONE frame line present AND JOINED	17	17	20	19	13	9	4	4

Interpretation: A decline in partial or complete frames from around 20% incidence in Kindergarten to 4% in Grades 3 and 4 was noted.

TABLE 2:6

USE OF CIRCLE OR ELLIPSE AS A FRAME (CONTINUOUS LINE WITH ROUND CORNERS)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO circle or ellipse as frame	96	98	100	99	100	99	100	99
INCOMPLETE circle or ellipse as frame, outside of which are NO objects	0	0	0	0	0	1	0	1
COMPLETE circle or ellipse as frame with NO objects outside of it	0	1	0	0	0	0	0	0
INCOMPLETE circle or ellipse as frame with NO more than TWO objects outside it	1	0	0	1	0	0	0	0
COMPLETE circle or ellipse as frame with NO more than TWO objects outside it	1	1	0	0	0	0	0	0
COMBINATION of ellipse/circle AND straight lines	2	0	0	0	0	0	0	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 2:7  
PARTITIONING

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO partitioning	98	99	98	91	92	99	98	96
ONE or MORE vertical lines present	0	0	0	5	1	1	1	3
ONE or MORE horizontal lines present	1	0	0	2	6	0	1	1
BOTH horizontal AND vertical lines present	0	0	1	1	1	0	0	0
ONE or MORE diagonals present	0	0	0	0	0	0	0	0
ONE or MORE vertical lines present within SCORED frame	0	1	0	1	0	0	0	0
ONE or MORE horizontal lines present within SCORED frame	0	0	0	0	0	0	0	0
BOTH horizontal AND vertical lines present within SCORED frame	0	0	1	0	0	0	0	0
ONE or MORE diagonals within SCORED frame	1	0	0	0	0	0	0	0
COMBINATION of vertical, horizontal and/or diagonal lines WITHIN or WITHOUT SCORED frames	0	0	0	0	0	0	0	0

Interpretation: Bases too small to justify the drawing of conclusions.



TABLE 2:8

PRESENCE OF TOP BOUNDARY

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
ABSENCE OF TOP BOUNDARY, either labelled or implied	86	91	62	48	65	69	82	87
LABELLED top boundary, e.g., "sky," "roof," "ceiling"	3	2	6	6	4	3	1	2
IMPLIED top boundary								
-- ceiling (not labelled) by having lights suspended from or attached to it or edge of paper								
-- OR roof (not labelled) by having a smoke-stack, chimney or triangular- shaped dome								
-- OR sky, which MUST be represented by a band								
-- OR shaded band at top of picture which cannot be identified as "sky," "roof," "ceiling"	11	7	32	46	31	28	17	11

Interpretation: Top boundaries were present in 14% of the first Junior Kindergarten drawings, increasing in frequency until the second Senior Kindergarten drawings, where the frequency was 52%, from then on the frequency decreased again until by Grade 4 the frequency had fallen to 13%.

TABLE 2:9  
TYPE OF TOP BOUNDARY

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO TOP boundary present	86	91	62	48	65	69	81	87
"Sky"	4	2	6	2	1	2	0	0
"Roof"	3	1	6	6	2	0	0	0
"Ceiling"	6	6	26	41	27	25	14	8
Unidentifiable band at TOP of picture	1	0	0	3	5	4	5	5

Interpretation: As the children got older they were less and less likely to have sky or roof as a top boundary.

TABLE 2:10  
PRESENCE OF BOTTOM BOUNDARY

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
ABSENCE OF BOTTOM BOUNDARY either labelled or implied	78	75	30	28	38	53	63	73
LABELLED bottom boundary, e.g., "floor," "ground," "grass"	2	6	9	8	6	6	2	4
IMPLIED bottom boundary e.g., floor, ground, grass, OR shaded band, NOT labelled but implied by the above criteria	20	19	61	64	56	41	35	23

Interpretation: A bottom boundary was present in 22% of the first Junior Kindergarten drawings but by the second Senior Kindergarten drawings its frequency was 72%, only to decline again in frequency to 23% by Grade 4.

TABLE 2:11  
TYPE OF BOTTOM BOUNDARY

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO BOTTOM boundary present	78	75	30	27	38	53	63	73
"Ground" (includes "grass")	8	5	9	8	2	0	0	0
"Floor"	12	18	55	59	58	45	36	26
Unidentifiable BOTTOM boundary	2	2	6	6	2	2	1	1

Interpretation: With age the frequency with which the bottom boundary was a floor increased.

TABLE 2:12  
PRESENCE OF SIDE BOUNDARIES (WALLS OR CURTAINS)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
ABSENCE of side boundaries LABELLED "wall(s)" or "curtain(s)"	98	97	96	83	80	88	85	82
ONE or MORE side boundaries LABELLED "wall(s)" or "curtain(s)"	2	2	4	5	3	4	2	0
ONE or MORE side boundaries IMPLIED "wall(s)" or "curtain(s)" e.g., light switch fastened to side of page or frame; phone attached to side of page or frame; flag attached to side of page or frame	0	1	0	12	17	8	13	18

Interpretation: Side boundaries became more frequent with age.

TABLE 2:13  
AMOUNT OF SPACE USED (ON THE PAGE)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
1/8 or less space used, e.g., only a corner filled or only one or two marks on page	0	0	0	0	0	0	0	0
1/4 to 1/2 page used	2	1	1	2	1	0	0	0
CORNER(S): whole page used but major or most conspicuous empty space occurs in CORNER(S) ONLY	4	4	3	9	8	4	4	2
BORDER(S): whole page used but major or most conspicuous empty space occurs along complete BORDER(S) ONLY	25	31	10	12	6	7	2	2
WITHIN: whole page used but major or most conspicuous space occurs WITHIN picture. Space within picture may include border(s) and/or corner(s)	49	48	76	40	54	69	69	55
NO CONSPICUOUS space(s): whole page used but scattered spaces present. Spaces must be approximately equal. If ANY ONE space is conspicuous, DO NOT code	20	14	4	25	20	9	10	12
ALL space on complete page filled, i.e., page completely covered with colour (and/or objects)	0	2	2	10	11	11	15	29
ALL space within scored frame filled (one or more frame-lines) i.e., enclosure completely covered with colour (and/or objects)	0	0	4	2	0	0	0	0

Interpretation: The later drawings contained far fewer instances of empty spaces. There was also a clear tendency for what empty spaces did occur to be placed in the centre; this trend became more marked with time.

TABLE 2:14

SCOPE OF THE DRAWING (WHAT AREAS ARE INCLUDED IN THE DRAWING)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Not scorable, e.g., no picture, or scribbles with or without any labels	8	7	1	0	1	0	1	0
NONE of classroom or school represented	7	5	1	5	1	0	0	1
Only a collection of recognizable object(s) and/or people not scorable under other categories	18	17	2	15	11	5	2	5
BOTH outdoor areas and/or objects and ANY part of the school building and/or content present (outdoor areas include objects, people, boundaries, outside the school building)	32	27	28	12	6	3	0	0
Only the school or part of the school present (no outside areas.) The exterior of the building, e.g., a chimney, is NOT to be taken as an outside area	12	8	7	9	1	0	0	1
Only the classroom or part of the classroom present	23	36	61	59	80	92	97	93

Interpretation: In the first Junior Kindergarten drawings 23% of the drawings included only the classroom but in Grades 2, 3 and 4, 90% included only the classroom; as time passed the scope of the drawings became more specific.

TABLE 2:15  
SHADING OF SPACE OR BACKGROUND

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO shading of background	45	50	36	73	59	70	59	53
ANY shading of background. Exclude colouring of objects, e.g., blackboard, and people. Include shaded bands, e.g., ceiling, floor, wall, sky, grass, etc.	55	48	60	12	29	18	30	23
COMPLETE shading of background, i.e., whole page shaded, or entire background within frame shaded	0	2	4	8	12	12	11	24

Interpretation: With increasing age, instances of complete shading increased from nil on the first drawings collected, to 50% of all shading occurrences by Grade 4.

TABLE 2:16  
COMPRESSION/EXPANSION OF WHOLE DRAWING

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Extremely constricted	1	0	0	2	0	1	0	1
Whole drawing is not constricted	99	100	100	98	100	99	100	99

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 2:17

VIEWPOINT

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
No object(s) present	4	6	0	0	0	0	0	0
Abstract, non-representational drawing and/or a drawing with NO SCORABLE viewpoint	66	66	2	10	6	2	1	2
A cross-sectional viewpoint, e.g., the room and/or school and/or most objects are viewed from one of the four sides of the classroom	23	23	89	68	81	80	75	47
Multiple or combined viewpoint, ceiling, floor folded out, one or more objects may or may not be folded out	7	5	9	22	13	18	24	51

Interpretation: There was a trend with age towards and increasing use of cross-sectional and multiple viewpoints and away from abstract pictures.

TABLE 2:18

CHILD HAS USED BOTH SIDES OF HIS PAPER

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Child has used ONLY one side of his paper	88	90	92	94	79	76	60	71
Child has used BOTH, (TWO) sides of his paper. Include ANY markings and/or labelling	12	10	8	5	21	24	40	29

Interpretation: There was a variable but increasing tendency for the older children's drawings to feature use of both sides of the paper.

STATISTICAL APPENDIX

CLASSROOM CONSTANTS -- TABLES 3:1 - 3:13



TABLE 3:1

INCLUSION OF ANY OF LIGHTS, WINDOWS, DOORS, PICTURES, DESKS OR TABLES AND CHAIRS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO lights, windows, doors, pictures, desks or tables	41	40	10	9	1	1	2	1
The presence of ANY of lights, windows, doors, pictures, desks or tables and chairs	59	60	90	91	99	99	98	99

Interpretation: Inclusion of constants increased from 60% in Junior Kindergarten to near total in the Grades 1, 2, 3 and 4.

TABLE 3:2

LIGHTS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	11	9	1	1	2	1
NO electric LIGHTS present	44	42	47	48	58	51	64	80
Only ONE electric light present	7	4	11	8	15	17	17	8
MORE than one light, MORE than ONE COLOUR used	0	3	3	10	2	2	1	1
MORE than one light, EACH LIGHT A DIFFERENT COLOUR	1	1	5	0	2	1	0	1
MORE than one light, ALL the SAME colour or SET of colours	7	10	23	25	22	28	16	9

Interpretation: The inclusion of lights showed an inverted "U" distribution rising from about 20% frequency in Junior Kindergarten to nearly 50% in Grade 2 but falling back to about 20% again by Grade 4.

TABLE 3:3

WINDOWS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	10	9	2	1	2	1
NO WINDOW(S) present	29	29	40	56	75	78	82	86
Only ONE window present	10	15	15	13	11	9	5	6
MORE than one window, MORE than ONE colour used	6	5	9	3	4	0	0	1
MORE than one window, EACH window a DIFFERENT colour	3	4	3	1	0	0	0	0
MORE than one window, ALL windows the SAME colour or SET of colours	11	7	23	18	8	12	11	6

Interpretation: The incorporation of windows declined from 30% in Junior Kindergarten to 13% in Grade 4.

TABLE 3:4

DOORS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	11	9	1	1	2	1
NO DOOR(S) present	35	32	47	55	76	58	78	78
Only ONE door present	16	18	31	22	22	39	19	19
MORE than one door, MORE than ONE colour used	0	2	3	2	0	1	0	1
MORE than one door, EACH door a DIFFERENT colour	3	5	4	5	0	0	0	1
MORE than one door, ALL doors the SAME colour or SET of colours	5	3	4	7	1	1	1	0

Interpretation: Less than half of the drawings at any age contained doors. There was a slight tendency for the younger children to include more than one door. This tendency declined with age.

TABLE 3:5

PRESENCE OF PICTURES (BLACKBOARDS, WALL CHARTS, BULLETIN BOARDS, WALL PICTURES)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or table and chairs)	41	40	10	9	1	1	2	1
NO pictures, etc. present	49	50	49	54	19	4	4	10
ONLY blackboard(s), wall chart(s) and/or bulletin board(s) present	0	2	4	3	52	61	68	67
ONLY PICTURES present, i.e., traditional meaning of pictures such as children's paintings, picture of the Queen, etc.	10	8	33	31	8	6	2	1
Above two codes are present	0	0	4	3	20	28	24	21

Interpretation: The frequency of the inclusion of either pictures or blackboards (etc.) increased from 10% in Junior Kindergarten to around 90% in Grades 2, 3 and 4. The ratio of blackboards to pictures increased from Junior Kindergarten to Grade 4.

TABLE 3:6  
CHILDREN'S FURNITURE

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	10	9	1	1	2	1
NO children's desks or tables present	44	50	43	59	40	27	18	31
Only ONE child's desk or table present	11	4	25	18	14	10	7	6
MORE than one desk or table, MORE than ONE COLOUR used	1	2	7	3	12	13	12	16
MORE than one desk or table, EACH one a DIFFERENT colour	1	1	4	4	3	5	10	0
MORE than one desk or table, EACH ONE the SAME colour or SET of colours	2	3	11	7	30	44	51	46

Interpretation: The frequency of including children's furniture increased from around 10% in Junior Kindergarten to between 60% and 80% in Grades 1 to 4. The older children were more likely to include more than one desk or table.

TABLE 3:7  
CHILDREN'S CHAIRS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	10	9	1	1	2	1
NO children's chairs present	52	55	56	63	56	36	33	47
Only ONE child's chair present	3	2	14	12	4	7	5	1
MORE than one child's chair, MORE than ONE COLOUR used	1	1	4	4	7	14	10	9
MORE than one child's chair, EACH CHAIR a DIFFERENT colour	0	0	0	1	3	6	9	0
MORE than one child's chair, EACH CHAIR the SAME colour or SET of colours	3	2	16	11	29	36	41	42

Interpretation: The frequency of including chairs increased from under 10% in Junior Kindergarten to 65% in Grade 3 but it fell back slightly to 50% in Grade 4.

TABLE 3:8

TEACHER'S DESK OR TABLE

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	10	9	1	1	2	1
NO teacher's desk or table present	59	58	79	79	76	64	54	49
TEACHER'S desk or table present	0	2	11	12	23	35	44	50

Interpretation: The frequency of including a teacher's desk increased from zero in Junior Kindergarten to 50% in Grade 4.

TABLE 3:9

TEACHER'S CHAIR

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	10	9	1	1	2	1
NO teacher's chair present	59	60	80	80	84	73	67	65
TEACHER'S chair present	0	0	10	11	15	26	31	34

Interpretation: The frequency of including a teacher's chair increased from zero in Junior Kindergarten to 34% in Grade 4.

TABLE 3:10

BACKGROUND SHADING OF BLACKBOARD(S), WALL CHART(S), BULLETIN BOARD(S)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, pictures, desks or tables and chairs)	41	40	10	9	1	1	2	2
NO blackboard(s) etc. present	58	59	86	84	28	10	4	10
Blackboard(s) etc. present BUT NOT SHADED	0	0	2	2	17	21	15	18
Blackboard(s) etc. shaded with the same colour as the outline OR shaded with NO outlines	0	0	0	2	32	39	57	41
Blackboard(s) etc. shaded with DIFFERENT colour(s) from outline	1	1	2	3	22	29	22	29

Interpretation: The inclusion of this class of constants increased from 1% in Junior Kindergarten to around 90% in Grades 2, 3 and 4. Most of the constants were shaded.



TABLE 3:11

APPEARANCE OF SHADING IN LIGHTS, WINDOWS, DOORS, DESKS OR TABLES AND CHAIRS  
EXCLUDING PICTURES, BLACKBOARDS, ETC.

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, desks or tables and chairs) present or only picture(s), blackboard(s), etc. present	42	44	11	9	10	11	10	18
NO SHADING WITHIN CONSTANTS	35	35	39	40	25	13	15	8
Object(s) shaded with NO outlines	4	4	1	6	4	3	0	0
Objects(s) shaded with SAME colour as outline	6	4	17	17	16	33	37	36
Object(s) shaded with DIFFERENT colour(s) from outline	10	7	20	11	24	21	17	14
Instance(s) of any combination of the above three codes	3	6	12	17	21	19	21	24

Interpretation: The listed constants were present in just over 50% of the Junior Kindergarten drawings, but in over 80% of the drawings in all other years. Where present, the constants were more likely to be shaded in the higher grades.

TABLE 3:12

USE OF COLOUR WITHIN LIGHTS, WINDOWS, DOORS, DESKS OR TABLES AND CHAIRS  
EXCLUDING PICTURES, BLACKBOARDS, ETC.

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, desks or tables and chairs) present or only picture(s), blackboard(s) etc. present	42	44	11	9	8	11	10	19
NO COLOUR within constants -- OR COLOUR NOT USED as elaboration or differentiation	34	32	37	37	25	14	14	6
Colour used as SHADING ONLY. Constant may be shaded with SAME or DIFFERENT colour from outline, e.g., a shaded door	16	13	27	29	56	55	52	61
DIFFERENT colour(s) used as ELABORATION, e.g., decorative ornamentation, design, pattern, stripes	0	2	3	6	2	2	3	1
DIFFERENT colour(s) used to distinguish DIFFERENT PARTS of a whole object, e.g., light bulb will be different colour than stem, knob from door, cross frame different colour than frame, at window	6	7	20	16	8	18	17	12
Instances where the above two codes appear together	2	2	2	3	1	0	4	1

Interpretation: The use of colour in elaboration or differentiation increased from a 24% frequency in Junior Kindergarten to a 75% frequency in Grade 4.

TABLE 3:13

GROUPING OF TYPES OF CONSTANTS

THREE OR MORE OF SAME TYPE OF CONSTANT, NEAR EACH OTHER, MAKE A GROUP  
EXCLUDING PICTURES, BLACKBOARDS, ETC.

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO constants (lights, windows, doors, desks or tables and chairs) present or only picture(s), blackboard(s) etc. or only ONE object present or one of each type of constant present	63	63	28	35	37	23	21	33
ONLY TWO of the SAME TYPE of constant present	11	10	13	14	9	8	8	3
Three or more of the same TYPE of constant present but NOT GROUPED	4	4	5	6	0	5	5	1
GROUPING OF CONSTANTS BY TYPE, e.g., THREE or MORE lights placed near each other	6	2	7	3	15	10	8	6
Constants are grouped by size, i.e., ALL objects of constant TYPE are APPROXIMATELY SAME SIZE	3	2	4	1	3	3	5	3
Constants are grouped by colour, i.e., ALL objects of a constant type are the SAME colour	3	5	7	23	8	10	6	5
Same constant is grouped by both size and colour	10	11	24	10	19	22	35	43
Within the SAME TYPE of constant, constants are grouped by more than one SIZE	0	1	2	0	0	3	2	1
Within the SAME TYPE of constant, constants are grouped by more than one colour	0	0	4	3	1	3	1	0
Constants are grouped by BOTH size and colour	0	2	6	5	8	13	9	5

Interpretation: Instances of grouping increased from about 20% in Junior Kindergarten to about 50 to 60% in subsequent years. Grouping the same constant by both colour and size increased with age.

STATISTICAL APPENDIX

DRAWING THE PERSON -- TABLES 4:1 - 4:20

TABLE 4:1

HEAD

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO head(s) present	0	2	0	0	0	0	0	0
Head(s) present	26	17	18	12	12	8	7	2
Head(s) and hair present	13	22	30	30	39	40	45	22
Head(s) and ears present	4	3	1	1	1	1	0	0
Head(s) and hair and ear(s) present on any one head	1	0	4	3	2	5	2	4

Interpretation: There was a clear increase with age in the likelihood of hair being drawn upon heads. Ears remained an uncommon appendage even in Grade 4.

TABLE 4:2  
FACIAL FEATURES (EYES, NOSE, MOUTH)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO facial features present	1	5	4	2	3	4	14	4
Facial features present but no outline of head	0	0	0	0	0	0	0	0
Incomplete facial features, i.e., missing eye(s), or nose, or mouth	19	18	9	9	16	17	14	5
Complete facial features present (frontal view) - eyes, nose and mouth on any one face	24	21	39	33	31	30	22	14
Complete facial features (profile) - one eye, nose and mouth on any one face	0	0	1	2	3	2	3	2
Complete facial features of both front and profile views present in different faces	0	0	0	0	1	1	1	3
Combination of COMPLETE facial features of both front and profile views present in the same face	0	0	0	0	0	0	0	0

Interpretation: No trends in facial completeness were noted.

TABLE 4:3  
STEREOTYPING OF FACIAL FEATURES (EYES, NOSE, MOUTH)  
EXCLUDING EYEBROWS, EYELASHES OR TEETH

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO facial features present or only one type of representation of each facial feature	44	42	47	41	49	44	45	24
Profile and frontal presentation of face but facial features presented the same way within each presentation	0	0	2	0	1	3	3	1
Profile and frontal presentation of face with any facial features in profile presentation different from facial features in frontal presentation	0	0	1	0	0	2	2	2
MORE than one type of representation of ONE or MORE facial features presented frontally	0	2	3	5	4	5	3	0
MORE than one type of representation of ONE or MORE facial features presented in profile	0	0	0	0	0	0	1	1
Occurrence(s) of the above two codes	0	0	0	0	0	0	0	0

Interpretation: Bases too small to justify the drawing of conclusions regarding different formats to features. They were stereotyped for all ages studied.

TABLE 4:4

USE OF A COLOUR FOR FACIAL FEATURES (EYES, NOSE, MOUTH)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO facial features and/or outline of head	1	6	4	2	3	4	14	4
ALL facial features SAME colour as outline of head	32	28	27	25	23	17	9	5
ALL facial features one colour, but not the same colour as outline of head	9	5	9	5	14	17	9	9
DIFFERENT facial features DIFFERENT colours, e.g. both eyes one colour, nose a different colour	2	5	10	14	12	15	22	9
Instances of the above two codes	0	0	3	0	2	1	0	1

Interpretation: The older children made a greater use of colour to differentiate features.

TABLE 4:5

NECK

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO neck	43	40	44	41	48	44	40	18
Neck present, distinct from the head and trunk	1	4	9	5	6	10	14	10

Interpretation: The frequency of distinct necks increased with age.



TABLE 4:6

ARM(S)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO arm(s) present	18	21	8	4	6	2	4	1
Arm(s) NEAR but NOT ATTACHED to HEAD	2	0	0	2	0	0	0	0
Arm(s) ATTACHED to HEAD	5	5	1	2	1	0	0	0
Arm(s) ATTACHED to legs, when there is NO trunk present	2	3	3	0	0	0	0	0
Arm(s) NEAR BUT NOT ATTACHED to trunk, shoulder or neck	0	0	0	0	1	0	0	0
Arm(s) ATTACHED to trunk, shoulder, or neck	17	15	39	35	43	46	42	19
Arm joint, i.e., elbow shown	0	0	2	3	3	6	8	8

Interpretation: With increasing age arms were more likely to be included on the drawing of a person and they were more frequently correctly placed.

TABLE 4:7  
FINGERS AND HANDS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO hand(s) or fingers present	30	30	28	27	40	31	24	13
Unidentifiable appendage attached to arm(s)	5	3	4	0	2	3	4	2
Any clear indication of finger(s)	6	5	8	6	4	3	9	2
Any clear indication of hand(s)	3	2	7	2	2	7	5	2
Five fingers present but NO hands	0	3	1	4	1	0	1	0
Differentiation of thumb from fingers but NO hands	0	0	0	0	0	0	0	0
Hands with one or more fingers present	0	0	3	5	2	5	6	6
Hands with five fingers present	0	0	2	2	3	1	0	1
Hands with clear differentiation of thumb from fingers; point of attachment nearest to wrist	0	1	0	0	0	4	5	2

Interpretation: For all ages only half the drawings containing people had hands or fingers. The older children were more likely to show fingers and a thumb on any hands they drew.

TABLE 4:8

LEGS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO leg(s) present	8	13	11	2	5	3	3	2
Leg(s) near but not attached to head	1	1	0	0	0	0	0	0
Leg(s) ATTACHED to head	15	16	3	1	1	0	0	0
Leg(s) attached or almost attached to trunk ABOVE waist below head	0	0	0	0	0	0	0	0
Leg(s) near but not attached to trunk AT or BELOW waist	0	0	0	0	1	0	0	0
Leg(s) ATTACHED to trunk AT or BELOW waist	19	13	39	40	45	38	46	23
Leg joint, i.e., knee shown	1	1	0	3	2	13	5	3

Interpretation: With increasing age there was a decrease in the tendency to omit legs and from the second Junior Kindergarten drawings the legs were almost invariably correctly located at the bottom of the trunk.

TABLE 4:9  
INDICATION AND POSITION OF FEET

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	57	56	47	54	46	46	46	72
NO feet or shoes present	22	22	22	15	25	22	19	5
Feet or shoes turned IN	0	0	0	0	0	0	0	0
Feet or shoes turned OUT	6	12	10	11	5	8	8	3
Feet or shoes FRONTAL	6	1	7	5	2	6	1	3
Feet or shoes PROFILE	6	7	11	12	19	14	26	12
ANY combination of the above presentations among DIFFERENT people	3	2	2	2	3	4	0	5
ANY combination of the above presentations in SAME person	0	0	1	1	0	0	0	0

Interpretation: All age groups apart from Grade 4 had some 40% of persons drawn without feet, this value fell to about 20% in Grade 4. Profile representation of feet increased with age.

TABLE 4:10

PROPORTION OF FEET

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	57	56	47	54	46	46	46	72
NO feet or shoes present	22	23	22	15	25	22	19	5
Feet (foot) or shoes represented as a line	11	13	11	10	12	6	7	1
Feet (foot) or shoes represented as round or oval shapes	9	7	18	15	10	14	12	11
Feet (foot) or shoes proportionally correct, i.e., length and height of feet (foot) or shoes in about correct proportion	1	0	0	1	5	5	4	4
Feet (foot) or shoes with heels	0	1	2	5	2	7	6	7

Interpretation: With age elliptical representation replaced linear representation, proportionality became more common and more heels were drawn.

TABLE 4:11

TRUNK (MAIN PART OF BODY EXCLUDING HEAD AND LIMBS)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO trunk present	17	22	4	1	2	0	0	0
ONLY stick trunk	3	2	2	3	3	5	7	1
ONE PIECE trunk NOT STICK Any outlined shape	19	14	30	27	28	27	19	19
TWO PIECE trunk SHOWING WAIST	5	6	17	15	21	17	17	17

Interpretation: In Junior Kindergarten trunks were omitted by about 40% of the children, this value dropped to less than 10% for all upper ages. Trunks showing a waist became more frequent with age.

TABLE 4:12  
STEREOTYPING OF TRUNK REPRESENTATION

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO COMPARISON POSSIBLE								
-- ONLY ONE female and/or male present								
-- NO representation of trunk								
-- head only								
-- ONLY unspecified person(s)								
-- SEX cannot be identified	37	38	35	31	35	23	34	17
NO VARIETY in presentation of TRUNK STRUCTURE for either males and/or females	6	4	14	8	12	23	10	8
MORE THAN ONE TYPE of TRUNK STRUCTURE represented for females	1	2	4	3	5	7	7	2
MORE THAN ONE TYPE of TRUNK STRUCTURE represented for males	0	0	0	3	2	1	3	1
MORE THAN ONE TYPE of TRUNK STRUCTURE represented for both MALES and FEMALES	0	0	0	1	0	0	0	0

Interpretation: No trends were noted in the stereotyping of trunks.

TABLE 4:13  
REPRESENTATION OF BODY

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) or label(s)	56	56	47	54	46	46	46	72
One or more persons represented as abstract or unrecognizable BUT LABELLED, or HEAD only	3	6	3	0	0	0	2	1
An outlined body with NO appendages	5	4	2	0	0	0	0	0
One or more persons represented as incomplete stick figures. All parts present are stick but one or more parts are missing	15	14	3	2	1	0	0	0
One or more persons represented as incomplete outlined figures. All parts present are outlined but one or more parts are missing	1	4	7	2	7	3	3	2
One or more persons represented as complete STICK figures	1	2	3	3	2	5	7	0
One or more persons represented as INCOMPLETE with a mixture of stick and outlined parts	5	6	5	3	3	5	1	0
One or more persons represented as COMPLETE with a mixture of stick and outlined parts	13	6	16	19	23	17	13	3
An outlined body with OUTLINED arms and legs (MAY include some shading and/or detail)	1	1	13	12	18	20	23	17
An outlined body with complete clothing, e.g., boys: sleeves, trousers, shoes, e.g., girls: dress (may be sleeveless), blouse, sweater, skirt, shoes	0	1	1	5	0	4	5	5

Interpretation: There was a clear progression with age from incomplete stick figures to complete outlined figures.

TABLE 4:14  
VIEW OF PERSON

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
Person(s) present but "view" not scorable - no facial features present	1	5	5	3	3	4	8	2
FRONT view of both head and trunk OR head only when trunk absent	43	38	43	39	36	21	12	15
HALF and HALF, trunk front and head profile, or vice versa	0	0	3	0	6	12	12	0
SIDE view of head and trunk	0	0	0	2	3	6	5	3
BACK view of head and trunk	0	0	0	0	0	2	8	3
INSTANCES of BOTH codes 3 and 4 on this list	0	1	1	1	0	3	0	0
COMPLETE SIDE VIEW (must include feet)	0	0	1	1	6	6	7	3
COMPLETE BACK VIEW (must include feet)	0	0	0	0	0	0	2	1
INSTANCES OF BOTH codes 7 and 8 on this list	0	0	0	0	0	0	0	1

Interpretation: Back and side views increased in frequency with age.



TABLE 4:15

CLOTHING

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO clothing indicated	40	36	34	25	31	25	23	8
SOME clothing present	2	3	3	3	4	0	0	0
SOME CLOTHING NOT SHADED, with DETAIL present, e.g., zipper, buttons, stripes. DETAIL may or may not be shaded	0	1	4	2	1	1	0	2
SOME clothing shaded	1	3	5	10	12	22	22	9
SOME clothing shaded with DETAIL present	1	1	7	6	6	6	9	9

Interpretation: Omission of clothing on drawn figures was very frequent in Junior Kindergarten but declined rapidly with time so that from Grade 1 onwards drawn people were more frequently clothed than not.

TABLE 4:16

TRANSPARENCY

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO clothing indicated	41	37	35	26	31	25	23	8
SOME clothing present, but NO transparency	2	7	18	17	21	26	31	20
SOME clothing or shading present, with body structure CLEARLY visible underneath	1	0	0	3	2	3	0	0

Interpretation: Bases too small to justify the drawing of conclusions.

TABLE 4:17  
PRESENCE OF DETAIL

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO detail present	36	32	32	23	41	31	30	9
ANY detail present in face, i.e., ANY elaboration of eyes, ears, nose, mouth, hair	5	8	8	12	5	11	9	5
ANY detail present in clothing, i.e., ANY elaboration of clothing, ANY jewellery	2	1	9	9	7	3	8	8
Instances of both of the above two codes	1	3	4	2	1	9	7	6

Interpretation: No clear trend in the frequency of type of detail with age was shown.

TABLE 4:18  
PERSON(S) WITH THE MOST DETAIL

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
NO differentiation between person types on amount of clothing, features, hair, etc., i.e., all figures treated similarly in representation OR only ONE person in drawing	43	42	48	38	38	35	32	20
OTHER adult is most detailed	0	0	1	0	0	2	2	0
TEACHER is most detailed. Teacher MUST be identified by label.	0	1	2	3	8	15	15	5
BOY(S) most detailed	1	0	0	2	2	0	1	0
GIRL(S) most detailed	0	1	2	1	6	0	2	3
CHILDREN as compared to adults and/or teachers most detailed	0	0	0	0	0	0	0	0
ARTIST most detailed. Artist MUST be identified by label.	0	0	0	1	0	0	1	0
Unspecified persons, i.e., NOT labelled, most detailed	0	0	0	1	0	2	1	0

Interpretation: The most frequently detailed person was the teacher. This was most noticeable in the later drawings.

TABLE 4:19  
DIFFERENTIATION OF BODY PARTS BY USE OF DIFFERENT COLOURS  
EXCLUDING FACIAL FEATURES AND HAIR

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
Colours NOT used to differentiate body parts, i.e., only ONE colour used or one set of colours used	32	34	26	23	20	17	19	7
Colour used to differentiate HEAD ONLY by use of outline	5	4	0	5	9	2	5	2
Colour used to differentiate body parts by using different colours in the outline only (can include head if other parts also differentiated.) Include stick figures	3	3	11	7	7	9	2	5
Colour used to differentiate body parts by shading only	1	0	4	4	4	15	11	8
Body parts differentiated by use of colour in BOTH outline AND shading, i.e., more than one colour used in outline, AND more than one colour used for shading	3	3	12	7	14	11	17	6

Interpretation: Use of this technique increased with age.

TABLE 4:20  
DIFFERENTIATION OF INDIVIDUALS BY USE OF COLOUR  
EXCLUDING FACIAL FEATURES AND HAIR

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO person(s) present	56	56	47	54	46	46	46	72
ONLY ONE figure present and/or HEAD ONLY	20	26	20	18	14	9	15	8
ALL figures the SAME colour, or the same SET of colours	10	6	4	8	5	8	6	0
EACH individual is ALL one colour but all individuals are NOT the SAME colour	6	6	6	7	5	5	5	1
Any individual is MORE than ONE colour. Colour is NOT used to group.	8	5	21	13	30	31	25	18
Colour used to classify by group e.g., all pupils one colour or SAME SET of colours and teacher a different colour, or all girls yellow and all boys blue and red	0	1	2	0	0	1	3	1

Interpretation: A general trend towards multi-coloured people was noted.

STATISTICAL APPENDIX

OBJECTS -- TABLES 5:1 - 5:12



TABLE 5:1  
REPRESENTATION OF TRANSPARENT OBJECTS, e.g., AQUARIUM, WINDOW, EYEGLASSES  
EXCLUDING PEOPLE

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO objects present	3	3	0	0	0	0	0	0
NO examples of transparency	95	94	100	96	93	94	97	92
ONE example of transparency	2	3	0	4	7	4	1	6
MORE than one example of transparency	0	0	0	0	0	2	2	2

Interpretation: Examples of transparency were infrequent and showed no trend with age.

TABLE 5:2  
FOLD OUT  
EXCLUDING PEOPLE

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO objects present	3	3	0	0	0	0	0	0
NO example of fold out	95	96	94	91	99	95	94	92
ONE or MORE examples of fold out	2	1	6	9	1	5	6	8

Interpretation: Codeable occurrences were too infrequent for trends to be inferred.

TABLE 5:3

"BEHIND, IN FRONT OF" RELATIONSHIP OF OBJECTS TO EACH OTHER,  
e.g., TEACHER'S CHAIR BEHIND DESK

EXCLUDING PEOPLE

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO object(s) present	3	3	0	0	0	0	0	0
NO examples of "BEHIND, IN FRONT OF"	97	97	94	88	76	68	59	51
ONE or MORE examples of "BEHIND, IN FRONT OF"	0	0	6	12	24	32	41	49

Interpretation: Examples of this relationship increased from zero in Junior Kindergarten to 49% by Grade 4.

TABLE 5:4

"ON-UNDER" RELATIONSHIP OF OBJECTS TO EACH OTHER

EXCLUDING PEOPLE

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO object(s) present	3	3	0	0	0	0	0	1
NO examples of "ON-UNDER"	91	90	73	69	56	46	44	38
ONE or MORE examples of "ON-UNDER"	6	7	27	31	44	54	56	61

Interpretation: There was a steady growth in examples of "on-under" relationships from under 10% in Junior Kindergarten to 61% in Grade 4.



TABLE 5:5  
PERSPECTIVE OR DEPTH IN DRAWING  
INCLUDING BOTH PEOPLE AND OBJECTS

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO object(s) present	3	3	0	0	0	0	1	0
NO perspective or depth	95	95	94	86	72	66	63	56
Fairly FLAT appearance of whole drawing but OBJECTS recede by arrangement, i.e., are placed above and/or behind each other	1	2	5	12	24	28	32	37
Fairly FLAT appearance of whole drawing but OBJECTS recede by SIZE	0	0	1	1	4	4	0	2
REALISTIC OVERALL perspective, MUST include SOME of the above, plus other devices such as oblique, directional lines, etc.	1	0	0	1	0	2	4	5

Interpretation: There was an increasing use of some perspective devices but even in Grade 4 the occurrence of realistic perspective was rare.

TABLE 5:6

PREDOMINANT COLOUR (ONE COLOUR USED FOR THREE OR MORE PURPOSES,  
e.g., FRAME LINES, OUTLINES OF OBJECTS, SHADING, DETAIL)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO predominant colour	92	83	84	46	34	43	50	53
The predominant colour is red	3	4	7	15	8	6	1	1
The predominant colour is black	3	3	3	8	26	30	24	21
The predominant colour is brown	1	2	1	8	6	8	19	14
The predominant colour is yellow	0	0	0	3	7	5	0	0
The predominant colour is blue	1	2	1	7	8	3	0	4
The predominant colour is green	0	2	2	7	4	1	2	3
The predominant colour is orange	0	4	1	3	2	3	0	1
The predominant colour is purple	0	0	1	3	4	1	0	0
The predominant colour is pencil	0	0	0	0	1	0	4	3

Interpretation: The use of a dominant colour increased from 8% in the first Junior Kindergarten drawings to 66% in Grade 1 but then declined again to 47% by Grade 4. Red declined very much in popularity while brown showed a slight increase. Overall, black was the most popular colour. (It might be noted that the blackboards helped to account for this popularity.) No other colours were chosen with much frequency.

TABLE 5:7  
NUMBER OF COLOURS USED

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO picture drawn or no crayons used	0	0	0	0	0	0	0	0
One colour only	10	7	2	0	0	0	0	0
Two colours only	7	7	1	6	0	0	1	1
Three colours only	10	7	7	8	2	4	3	2
Four colours only	15	16	9	10	5	5	3	0
Five or more colours	58	63	81	76	93	91	93	97

Interpretation: There was a steady increase in the number of colours used.

TABLE 5:8  
USE OF PENCIL

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO pencil used	99	99	100	100	93	82	70	71
Pencil used only for detail, e.g., facial features, design in clothing, etc.	1	1	0	0	1	2	4	3
Pencil used only for outlines	0	0	0	0	2	2	3	2
The above two codes or other uses	0	0	0	0	4	14	23	24

Interpretation: There was an increasing use of pencil.

TABLE 5:9  
TIME AS INDICATED BY TENSE OF LABEL(S)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO labels present	2	4	0	1	0	0	2	0
NO time labels. Labels which ONLY NAME people, objects, or describe location, e.g., "this is you," "this is the flag," "this is where the toys are kept."	84	81	56	64	52	50	57	75
PRESENT TENSE. Description in the IMMEDIATE present, e.g., "I am sharpening my pencil," "Mary is doing her work."	9	6	13	18	19	22	20	9
PAST TENSE. Description of the past: (1) use of past tense by itself, e.g., "that's the thing I tripped over." (2) past brought into the present, e.g., "the girl is telling you something that happened yesterday."	1	2	3	2	5	2	2	4
FUTURE TENSE. Description of the future: (1) use of the future tense, e.g., "we will be going outside." (2) the present in relation to the future, e.g., "she's writing down the work for Tuesday."	0	0	0	0	0	0	0	0
CONTINUING PRESENT. Description of the Continuing Present incorporating the past, present and future, e.g., "this is the door we come in" (did come in, do come in, always will come in) and "these are the bells that tell you what time you go out of school," (always have, always will).	3	4	16	10	13	15	7	8
Both Codes 3 and 6 on this list	0	1	4	0	6	3	3	1
More than one or all of Codes 3, 4 and 5 on this list	1	2	5	2	2	7	6	2

...continued

TABLE 5:9 (continued)

TIME AS INDICATED BY TENSE OF LABEL(S)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
Any two of Codes 4, 5 and 6 on this list. Code 3 may or may not be present	0	0	3	3	3	1	3	1
All of Codes 4, 5 and 6 on this list. Code 3 may or may not be present.	0	0	0	0	0	0	0	0

Interpretation: The usage of time labels increased from less than 15% in Junior Kindergarten to 50% in Grade 2 but fell again to 25% in Grade 4. No change in the type of time label was noted.

TABLE 5:10

LABELLING TO INDICATE ACTIVITY OF PERSON(S) IN RELATION TO OBJECT(S)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO label(s) related to objects	2	5	4	66	1	0	2	0
Labels related to objects but not scorable under codes mentioned below	89	82	58	5	57	58	62	85
Relatively nonspecific person(s) active and relating to object(s), e.g., we, someone	5	7	19	10	19	12	10	6
Specific person(s) active and relating to object(s), e.g., I, you, me, boys	3	6	14	14	22	23	21	5
Example of each of the above two codes	1	0	5	5	1	7	5	4

Interpretation: There was a slight trend for this personal labelling to increase up to Grade 2 but then to decline again by Grade 4 to the Junior Kindergarten level.

TABLE 5:11

TIME AS INDICATED BY PICTORIAL SITUATION (AND LABELLING)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO "time" indicated or ONLY labels which name people, objects, and/or classroom locations	95	97	87	79	73	68	68	86
SCHOOL "TIME." The "time" is obviously in school time, e.g., children reading, doing arithmetic, music period, playing in Kindergarten or such labels as "these are the children working," "we are singing," "teacher is out of the room and we should be working."	4	2	11	16	24	27	27	10
BEFORE or AFTER SCHOOL "TIME." All or most children are out of the classroom and the "time" is before or after school OR at lunch. Teacher may or may not be present. (Chairs are often placed on tables.)	1	0	1	1	2	0	2	1
RECESS. Situation is the same as the above code but the "time" is labelled RECESS.	0	0	1	0	0	3	2	3
"READY TO LEAVE" OR "COMING IN" SITUATION. Children are lined up "to go out," "getting dressed to go home," "we're getting ready to leave," OR "we have just come in." Time may be represented as "continuing."	0	0	0	1	1	1	1	0
MANY "TIMES." Many "times" are compressed into one picture. A sequence of events is described which could not logically happen at one time by ONE person or by the SAME group of people, e.g., "hanging up my coat," "I'm sitting working," "I'm going to the wash-room." The place of all events is the same.	0	0	0	0	0	1	0	0

...continued

TABLE 5:11 (continued)

TIME AS INDICATED BY PICTORIAL SITUATION (AND LABELLING)

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
DIFFERENT "TIMES." Two completely different "times" represented. The places of events are different.	0	0	0	0	0	0	0	0
OUTSIDE CLASS "TIME." THE MAIN time selection has no relation to classroom, e.g., isolated event such as "house burning" or seasonal time such as a summer scene.	0	1	0	3	0	0	0	0

Interpretation: Codeable instances too infrequent for trends to be inferred.

TABLE 5:12  
CLASSROOM ATMOSPHERE

Code	JK1	JK2	SK1	SK2	G1	G2	G3	G4
NO people present	59	62	51	53	45	45	48	72
Person(s) present but NOT scorable for atmosphere	30	32	27	22	23	19	16	9
PASSIVE - NEUTRAL atmosphere; child (children) and teacher present; NO clear-cut emphasis on child (children) versus teacher; NO interest in activity shown.	4	0	5	3	6	9	6	5
ACTIVE - NEUTRAL atmosphere; children and teacher present; EQUAL emphasis on child (children) and teacher, BOTH engaged in some kind of activity.	2	0	3	4	9	11	14	5
CHILD-CENTRED ATMOSPHERE: Attention focused on children, on their activity and/or labelling; teacher may or may not be present	5	5	13	12	15	13	13	6
TEACHER-DOMINATED ATMOSPHERE: Attention focused on teacher by her activity and/or labelling; children may or may not be present	0	1	1	6	2	3	3	3

Interpretation: In the drawings where an "atmosphere" could be scored, the various kinds of atmosphere were equally common in relation to each other for all Grades.